



More Energy Efficient Schools & Libraries- Designs for New Construction

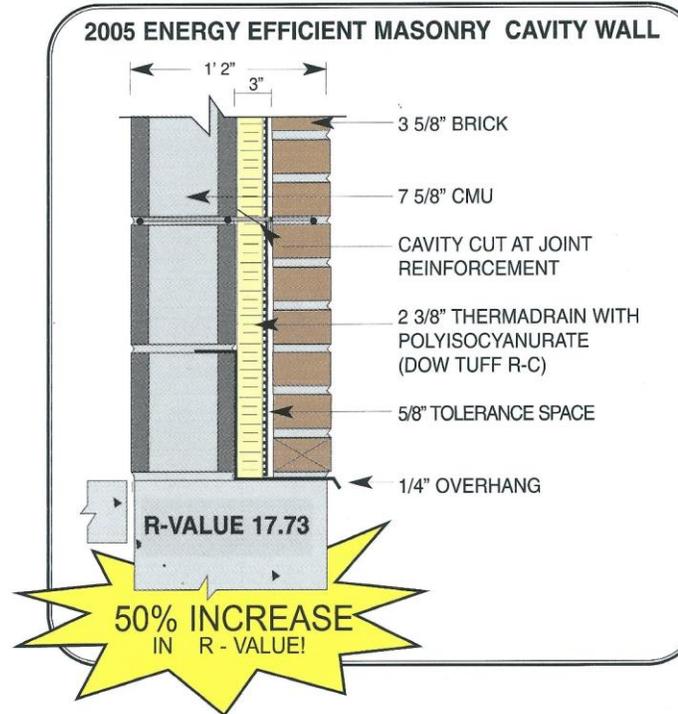
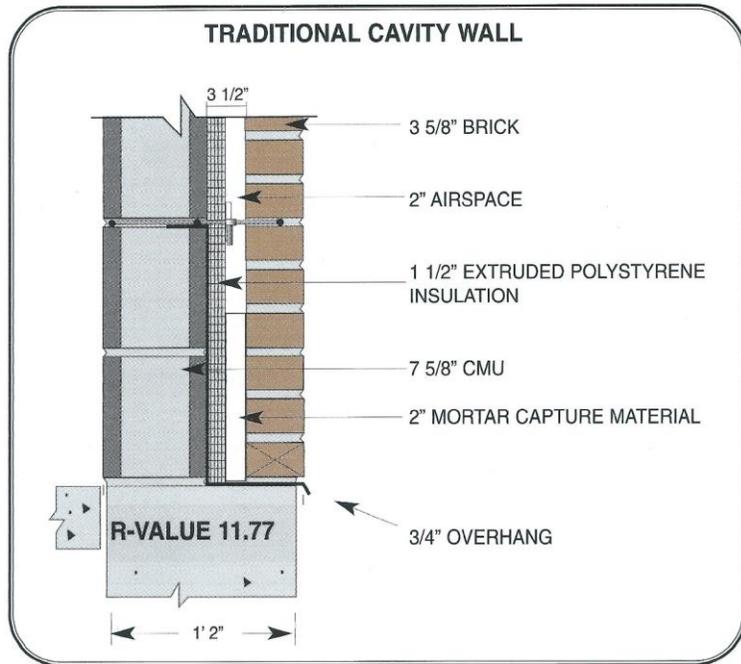
By The Masonry Advisory Council

Existing facilities, depending on when they were built, have somewhat limited and expensive solutions to the upgrading of existing solutions to the upgrading of existing insulation barriers against severe weather conditions. On the other hand, new buildings and new additions can be constructed with 21st Century “user and taxpayer friendly” standards which are dramatically more energy and cost efficient.

We should be maximizing our energy efficiency to reduce our limited operating budgets considering the escalating costs for energy. To combat inefficiency in design, we must ask questions of design teams before jobs are bid and buildings built. Compounding this issue, in addition to the design of the structure, is the annual cost of the energy itself. Rates for electricity and natural gas have doubled and in some cases tripled over the past months. Although we have little control over these economic forces, the investment now in constructing more energy efficient school buildings pays substantial dividends long after the bonds are retired.

1. Insulation is “hidden” inside the walls thus being out of sight and out of mind of the users, school board members and school administrators.
2. The architects and contractors are using the same system that they have used in the past with no improvements over the last 20 years when energy costs were much cheaper.
3. School boards and school administrators want proposed new buildings constructed for the same dollar per sq. ft. costs that were spent in the past. With increased pressure on designers and contractors to come up with cost savings, short-sighted school boards and administrators can be their own and the taxpayers worst enemies by not considering future energy costs.
4. Some construction managers and general contractors “value engineer” projects. Many of them chop as much as 8% off original design expenditures. They however don't have to pay the future energy bills. Rather than being solely interested in initial construction costs, quoted “perfect”, “owner demanded” delivery dates (realistic or not), construction managers and general contractors should help to educate school officials into considering future maintenance costs with “real world” delivery dates. When was the last time that formal suggestions for “energy additions” to reduce future energy costs were made to the appropriate decision-makers responsible for these new building constructions? “Value engineering” should be a two way street for deductions and additions for long term energy savings.
5. Under the “speed of construction” umbrella many projects have developed “scope” drawings for bidding purposes. If we continue to use vague, energy inefficient scope drawings for the lowest price then we will continue to build energy inefficient buildings. I suggest that the drawings for exterior wall section be highly detailed, with specific types and thicknesses of rigid insulation to be used.

SUGGESTED MASONRY WALL SECTION FOR YOUR NEXT ENERGY EFFICIENT SCHOOL , HOSPITAL OR MUNICIPAL FACILITY



A mason contractor that talked about this issue stated that there would not normally be any extra labor charge to install one insulation over another. The only added cost would be for the “thicker” rigid insulation. Spending an additional \$1.75 per sq. ft. on insulation could increase the overall project cost by only 1% and can yield a reduced heating and cooling costs by as much as 50% through its walls for the life of the building. If you think Nicor, Peoples Gas or Com Ed's rates are going to go down any time soon – you are naïve! This 2005 energy efficient masonry cavity wall will save tons of money during the future operation of these buildings. Consider also putting more and thicker insulation into the roof systems, energy efficient windows, double door entrances, set-back thermostats, energy efficient motors and more energy efficient electrical and mechanical systems and the long-term savings become even more impressive.

Ask probing questions before any contracts are signed or let for bid. Hopefully this will be a lesson for you to build smarter more energy efficient buildings so you will not suffer some of the same financial problems as described in a Chicago Tribune article.